

CLAIMS

What is claimed is:

5

1. A method for operating an electromagnetic gun in a shipboard environment, which method comprises:
 - providing an electromagnetic gun;
 - coupling the electromagnetic gun to a rotatable platform on a ship in a
 - 10 location which is open to the surrounding environment;
 - providing a pulse forming network having a substantially circular cross-sectional shape within a substantially cylindrical bulkhead located on a deck of the ship below the rotatable platform;
 - electronically connecting the pulse forming network to the gun;
 - 15 providing energy from the ship to charge the pulse forming network;
 - and
 - transferring pulsed energy from the pulse forming network to the electromagnetic gun.
- 20 2. The method of claim 1 further comprising:
 - providing a vertically aligned service port in the cylindrical bulkhead to provide access to the pulse forming network.
- 25 3. The method of claim 2 further comprising:
 - rotating the pulse forming network within the cylindrical bulkhead to provide access to components of the pulse forming network at different angular positions via the service port in the bulkhead.
- 30 4. The method of claim 1 further comprising:
 - rotating the pulse forming network and the electromagnetic gun in unison to aim the gun at a target.

5. The method of claim 1 wherein pulsed energy from the pulse forming network is provided to the electromagnetic gun via unbroken cabling.

6. A method for operating an electromagnetic gun in a shipboard environment, which method comprises:

supporting an electromagnetic gun upon a rotatable platform on one deck of a ship;

providing a pulse forming network having a substantially circular cross sectional shape;

locating the pulse forming network within a bulkhead located vertically below the rotatable platform on a lower deck of the ship and supporting same to rotate on the same axis as the platform;

electrically coupling the electromagnetic gun on the rotatable platform to the pulse forming network;

providing energy from the electrical system of the ship to charge the pulse forming network; and

causing pulsed energy from the pulse forming network to flow to the electromagnetic gun to operate the gun.

7. The method of claim 6 wherein the pulse forming network and the electromagnetic gun are rotated in unison to aim the gun.

8. The method of claim 6 wherein the pulsed energy from the pulse forming network flows to the electromagnetic gun via unbroken cabling.

9. A capacitor module for a pulse forming network, which module comprises:

a capacitor unit oriented in a radial direction with respect to a central axis of the network, the capacitor unit having an outer end wall, inner end wall and side surfaces that extend between the outer and the inner end walls;

wherein the outer end walls and inner end walls are aligned substantially normal to the radial direction and the outer end wall is wider than the inner end wall so that the capacitor unit tapers inward from the outer end wall to the

inner end wall.

10. The capacitor module of claim 9 further comprising:
a coupling module that is also oriented in the radial direction, which
5 coupling module has radially outer and an inner end walls and side surfaces;
wherein the radially outer end wall of the coupling module is
interconnected with the inner end wall of the capacitor unit, with the inner end wall of
the capacitor unit being wider than the outer end wall of the coupling module; and
wherein the radially outer end wall of the coupling module is wider
10 than its inner end wall so that the coupling module also tapers inward.

11. The capacitor module of claim 10 wherein a plurality of physically
similar capacitor units are independently interconnected to the coupling module and
are independently removable therefrom in a radially outward direction.

15

12. A space frame in combination with the capacitor module of claim 10,
which frame comprises:
means for supporting the coupling module in a location where it is
oriented in a radial direction to the axis of the network and where the coupling
20 module is connected to a pulse forming network bus, from which frame the coupling
module can be removed in a radially outward direction.

13. The space frame and capacitor module of claim 12 wherein the
capacitor module supported therein contains a plurality of capacitor units which
25 connect to the coupling module in a manner so that each capacitor unit may be
radially removed from the coupling module while the module remains supported in
said space frame.

14. The space frame and capacitor module of claim 13 wherein each of
30 said capacitor units has flat upper and lower surfaces and wherein said side surfaces
are also substantially flat.

15. The space frame and capacitor module of claim 14 wherein centering pins which are radially aligned are carried on said side surfaces of said capacitor units and wherein said space frame contains receptacles that receive said pins to align and support said units.

5